

(19)



JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **61291820 A**(43) Date of publication of application: **22 . 12 . 86**

(51) Int. Cl

**F23D 14/18**  
**F23C 6/04**
(21) Application number: **60134556**(22) Date of filing: **20 . 06 . 85**(71) Applicant: **MATSUSHITA ELECTRIC IND CO LTD**(72) Inventor: **SHIMADA RYOJI**  
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## (54) CATALYTIC BURNER

## (57) Abstract:

**PURPOSE:** To use in combination heating using a hot air flow and that using far infrared radiant rays to increase the space heating effect by installing a second combustion catalyst accommodated in a burner case made of a heat resisting metal on the forward surface of a first combustion catalyst.

**CONSTITUTION:** A first combustion catalyst 9 carrying a first oxidizing catalyst 8 on a honey-comb heat resisting ceramics is installed within a combustion cylinder 1 made of a heat resisting metal. A second combustion catalyst 15 carrying a second oxidizing catalyst 14 on a heat resisting porous ceramic fiber assembly accommodated in a burner case 10, is installed on the forward surface of said first combustion catalyst 9. Fuel premixing air is subjected to catalytic combustion on the first combustion catalyst. By the resulted hot exhaust gas flow, the second combustion catalyst 15 is heated, and the heat-exchanged hot exhaust gas flow is discharged as hot air flow. On the other hand, the second combustion catalyst 14 reaches the activation temperature by the hot exhaust gas flow from the first combustion catalyst 9, and the catalytic combustion is carried out and the radiation of far infrared rays is obtained. Accordingly, the hot air flow

excellent in the space heating ability and comfortable radiant rays are obtained simultaneously.

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